

**BNFL**



**Environmental  
Services**



**George Beveridge**

Director, Europe

BNFL Environmental Services

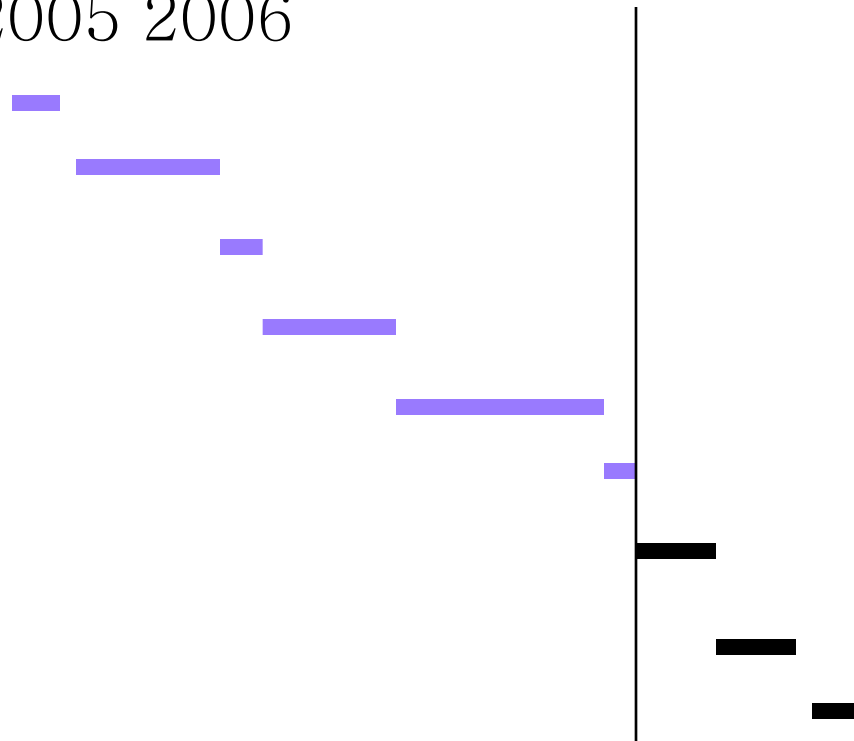
27 June 2003

# WAGR Decommissioning Programme

Campaign

2000 2001 2002 2003 2004  
2005 2006

Operational  
Waste  
Hot Box  
Loop Tubes  
Neutron Shield  
Graphite Core  
Thermal Shield  
Lower  
Structures



PV&I



Contract  
End date  
early 2005

Slide 4  
File Ref:

# Recent Successes

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- Preliminary Operations completed to programme
- Operational Waste completed to programme
- Hot Box 5 months late
- Loop Tubes completed 20 days early
- Neutron Shield completed 2 mths early
- Graphite Core completed 8 mths early
- Thermal Shield completed 30 days early

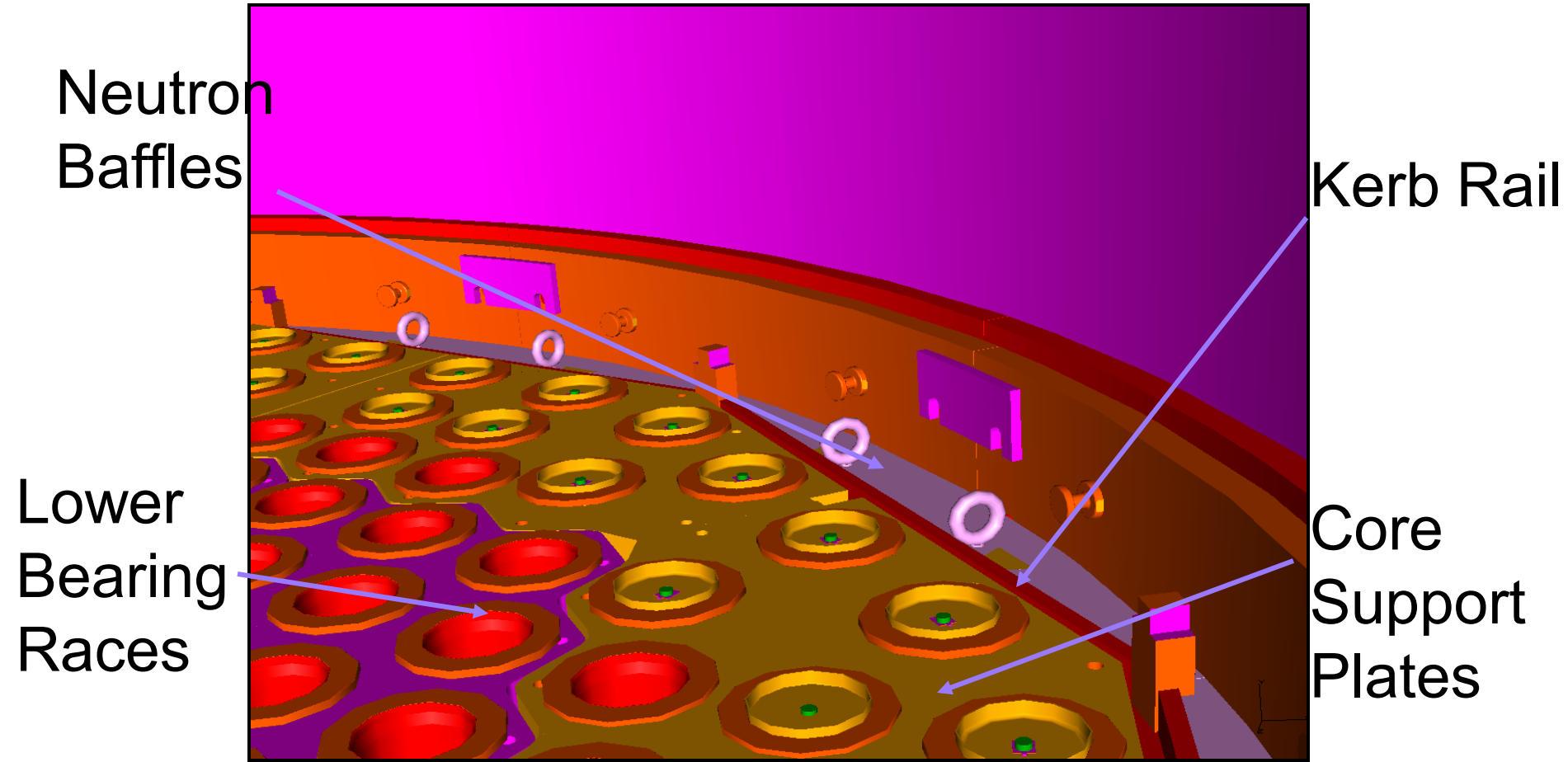
- 
- What's next?

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# WAGR Decommissioning

## Campaign 7a Lower Structures Dismantling

# Lower Structures Layout



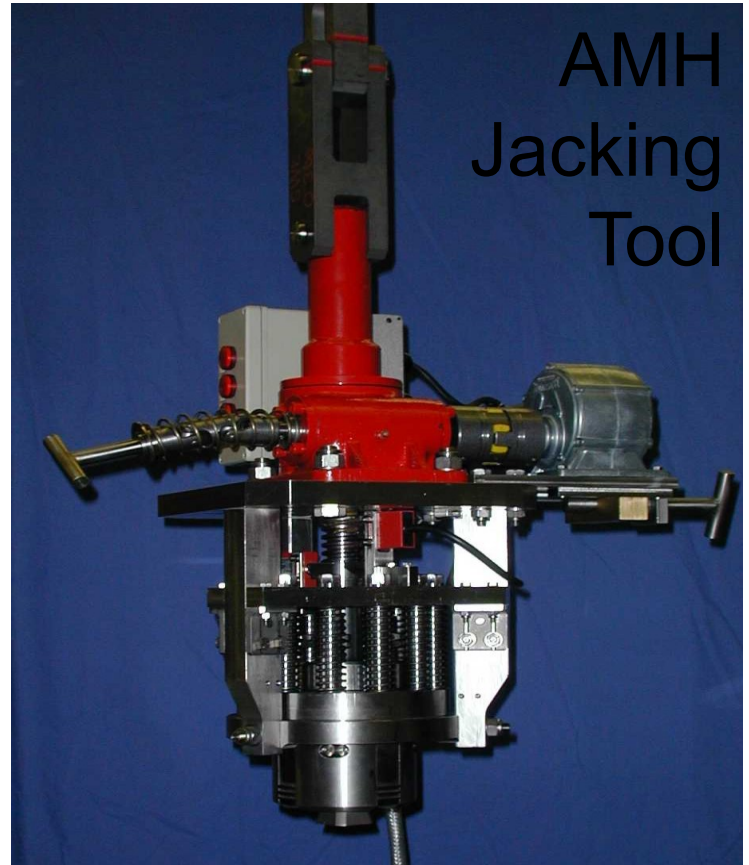
# Lower Structures Tooling

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Lower  
Bearing  
Race  
Puller



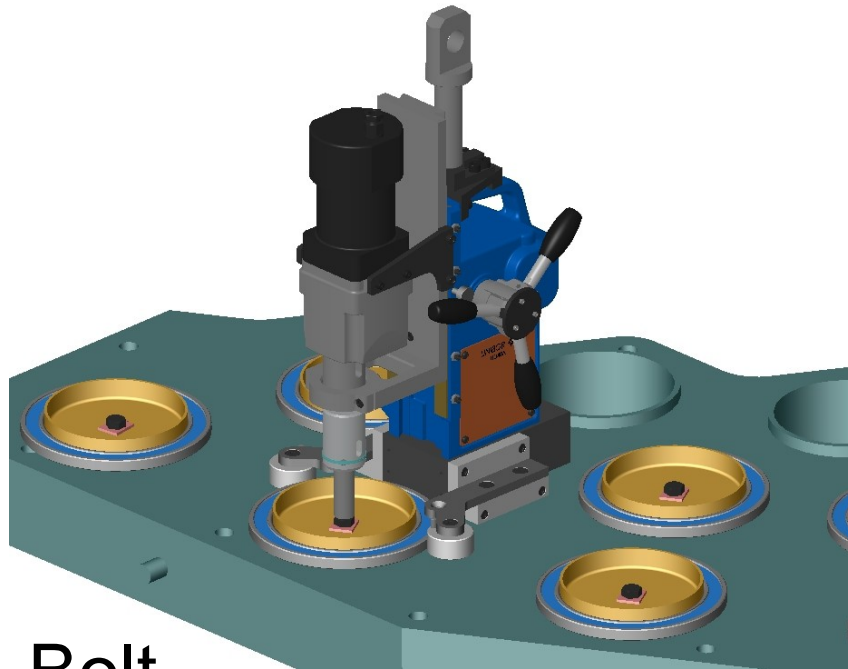
AMH  
Jacking  
Tool





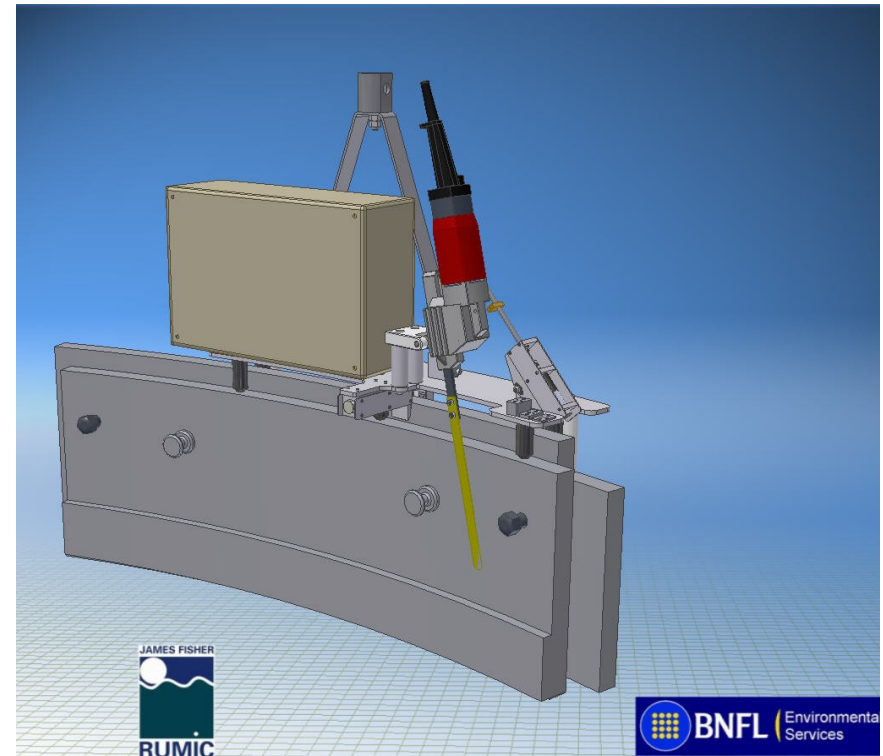
# Lower Structures Tooling

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Bolt  
Machining  
Tool

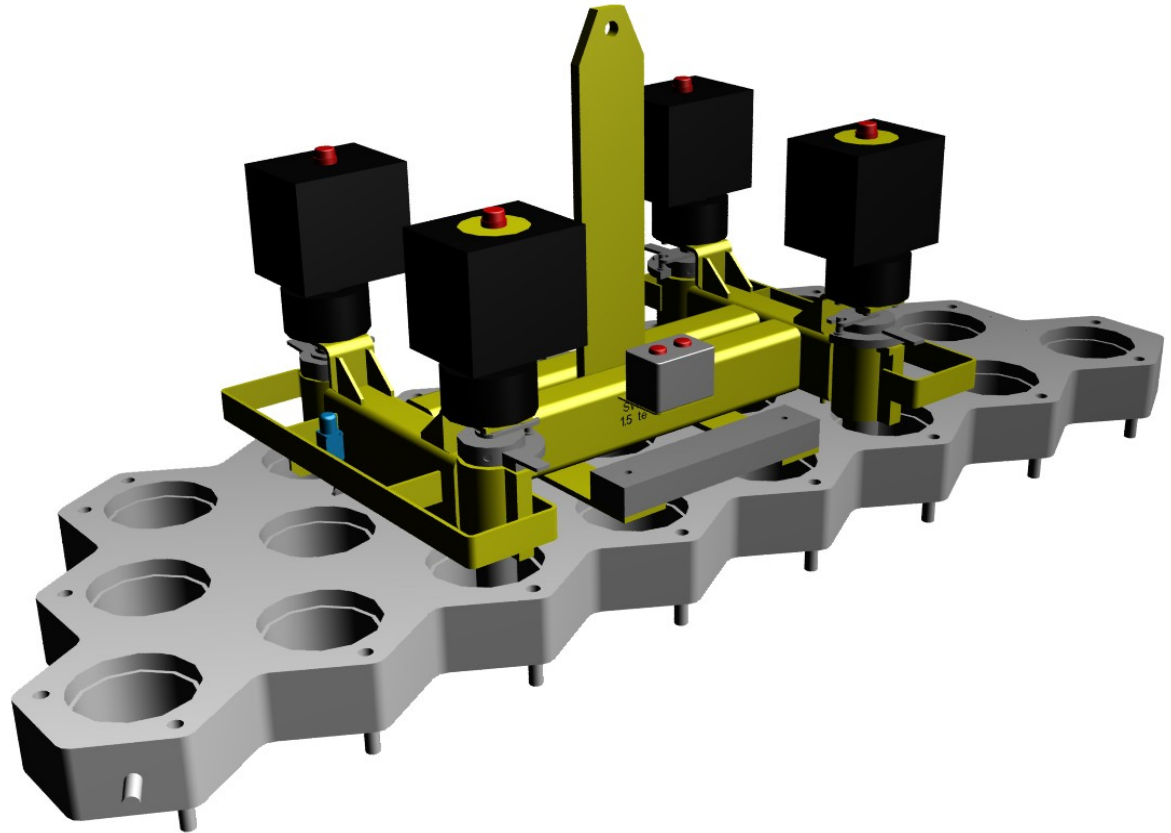
## Reciprocating Saw



# Lower Structures

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Twist Lock  
Grab with Type  
B Core Support  
Plate



# Waste Summary

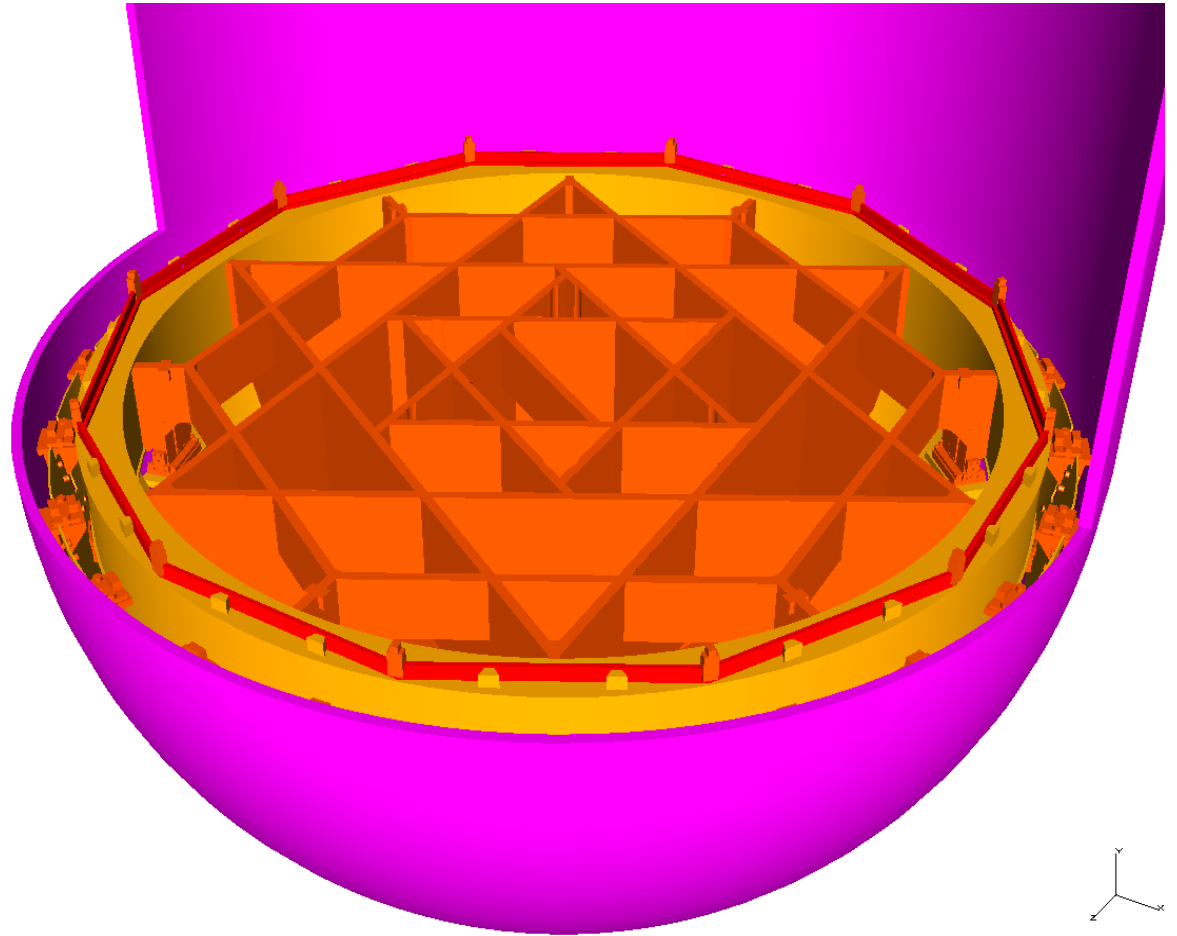
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- 7 Boxes (5 High and 2 Normal Density)
- 1 Core Support Bearing Race Basket
- 1 Flux Scanning Tube Bin (Campaign 7)
- 3 Thermal Shield Brick Baskets (Campaign 7)
- 5 Standard Half Height Baskets
- 4 Core Support Plate Waste Baskets
- Separators for Core Support Plates

# Lower Structures

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Campaign 7a  
end point with  
Diagrid Lattice  
and Ring Girder  
exposed



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# WAGR Decommissioning

## Campaign 8 Lower Structures Dismantling Stage 2

# Lower Structures Stage 2 Diagrid Lattice Dismantling

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- Diagrid Lattice will be size reduced into 43 sections using Oxy-Propane Cutting Torch
  - Torch deployed using electrically actuated Torch Tracking System
  - Cut sections removed using Diagrid Lattice Handling Grab
  - Cut sections loaded into 2/5HWBs or 3/5HWBs in Sentencing Cell or special furniture located on Diagrid, which will be subsequently loaded into a WAGR Waste Box
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# Lower Structures Stage 2 Ring Girder Dismantling

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- Diagrid Ring Girder will be size reduced into 12 sections using Oxy-Propane Cutting Torch
  - Torch also used to cut 2 grout flow slots into each section prior to removal
  - Torch deployed using electrically actuated Torch Tracking System
  - Cut sections removed using Diagrid Ring Girder Handling Grab
  - Cut sections loaded directly into WAGR Waste Box
  - Final 2 sections relocated to Ring Girder Supports for final cut
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# Waste Summary

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• Arrestor Mechanism Housing Furniture	1
• Diagrid Ring Girder Box Furniture	2
• Triangular Diagrid Section Stand	6
• Half Height Wastebasket	1
• 2/5 Height Wastebasket	3
• 3/5 Height Wastebasket	4
• Normal Density Waste Boxes	8
• High Density Boxes	1

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# WAGR Decommissioning

## Campaign 9

### Pressure Vessel and Insulation Dismantling

# Methodology overview...

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- Corbel clearance & Strake removal (manual)
- Above corbel RPV removal
- Main RPV 'barrel' section removal
- Tundish debris clearance
- Lower hemisphere and lower vessel support structures clearance.

Gas duct cut-outs

Strakes

Barrel & insulation

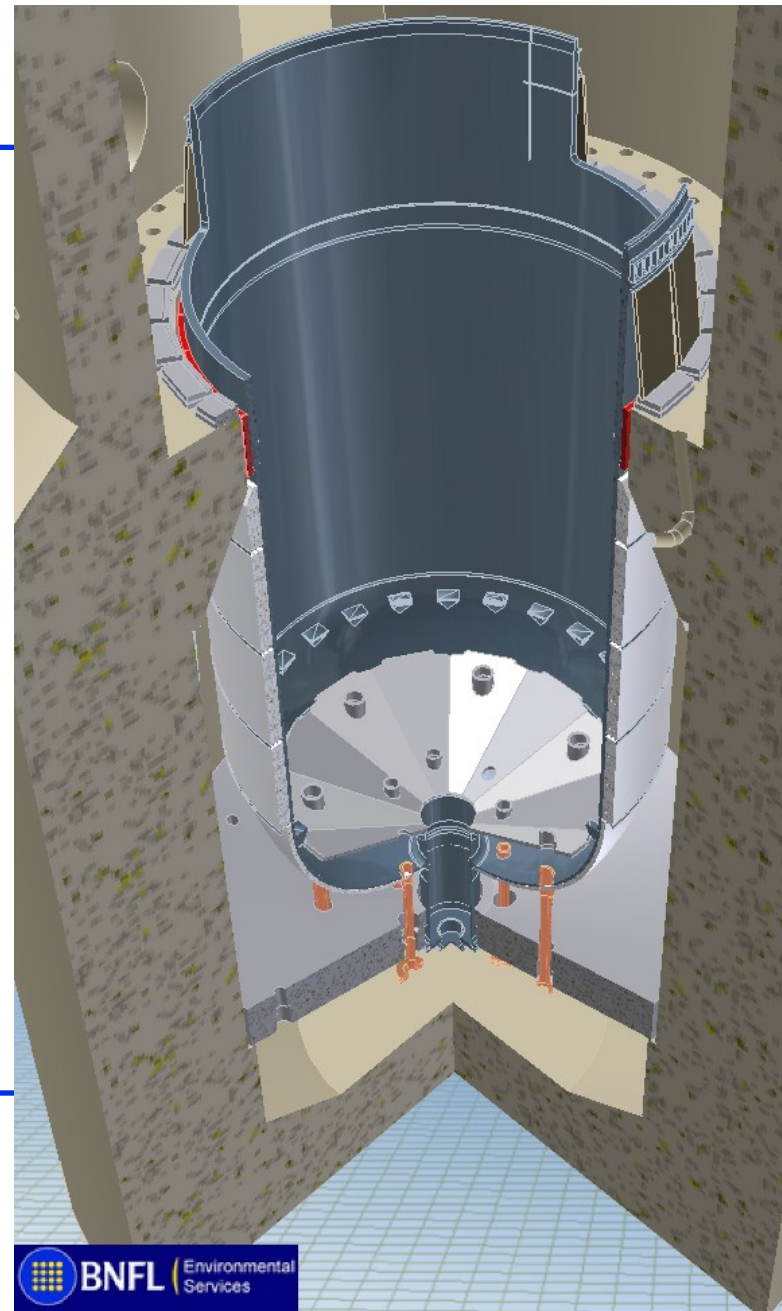
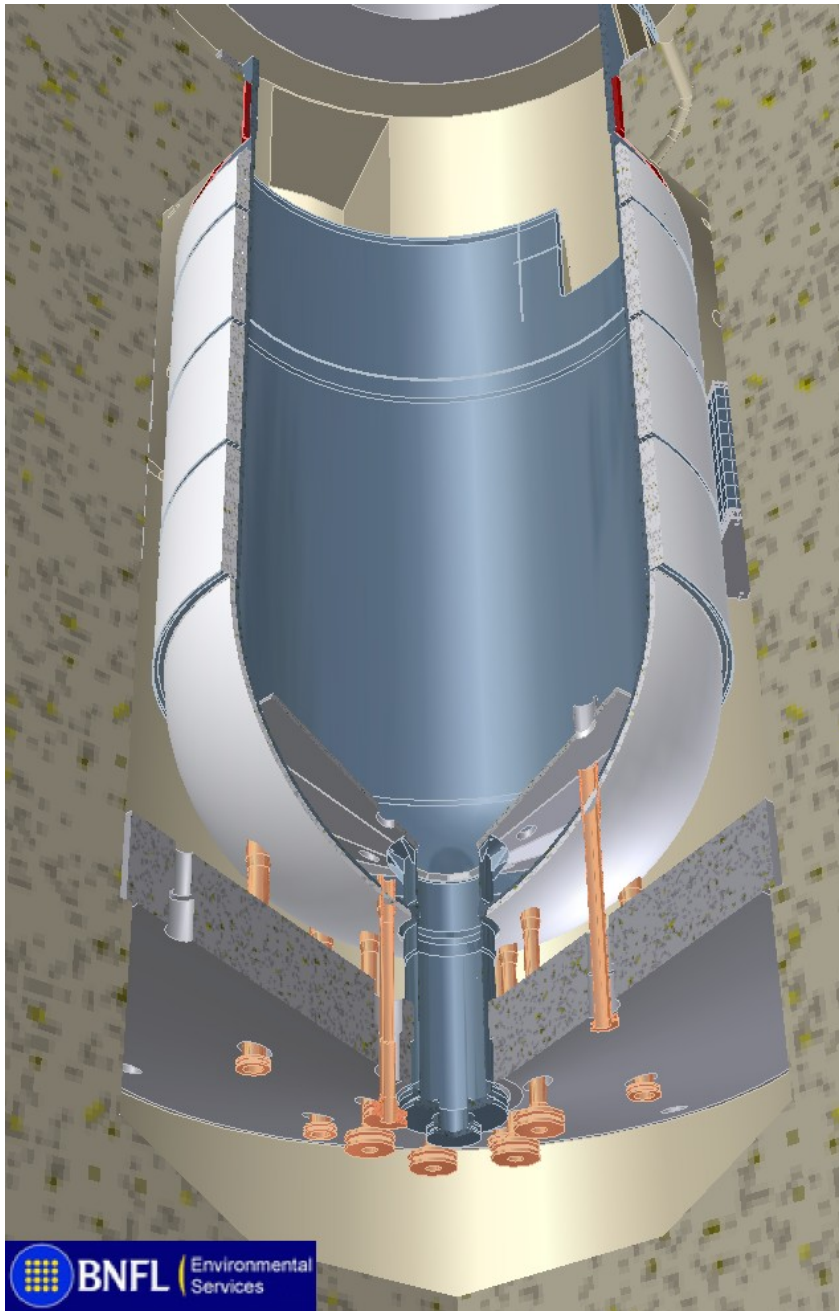
Tundish

Lower vessel supports

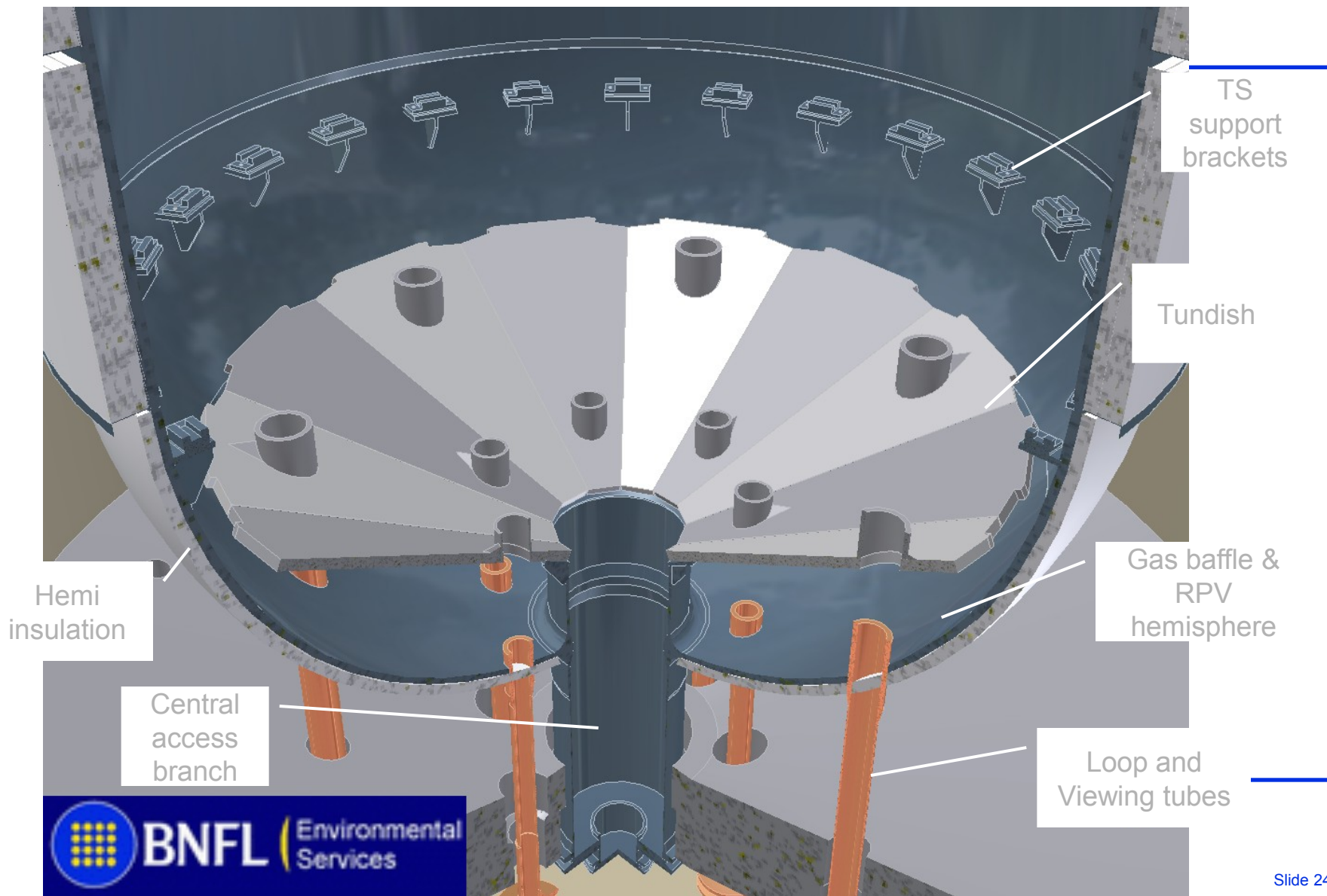
Lower hemisphere



**RUMIC**

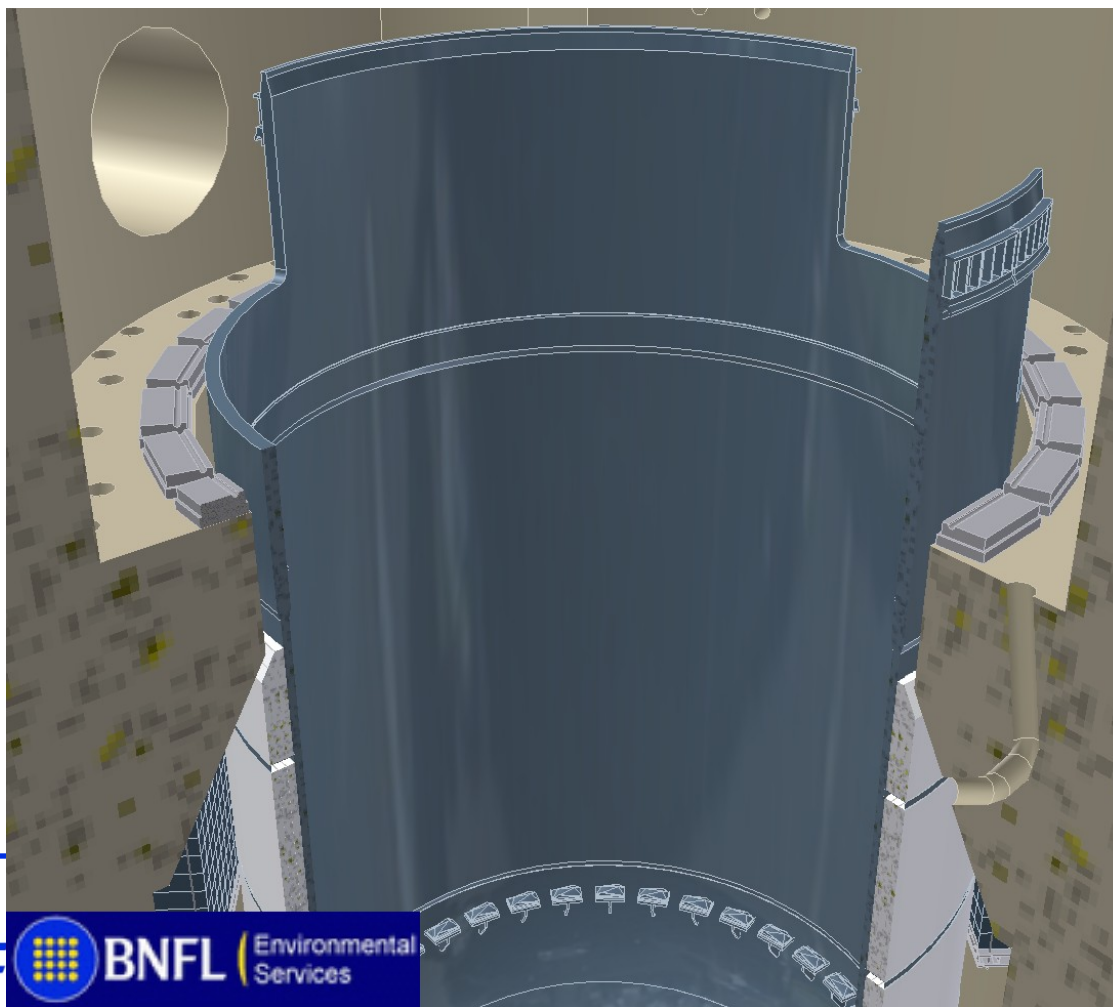






# Stage 1 – End state

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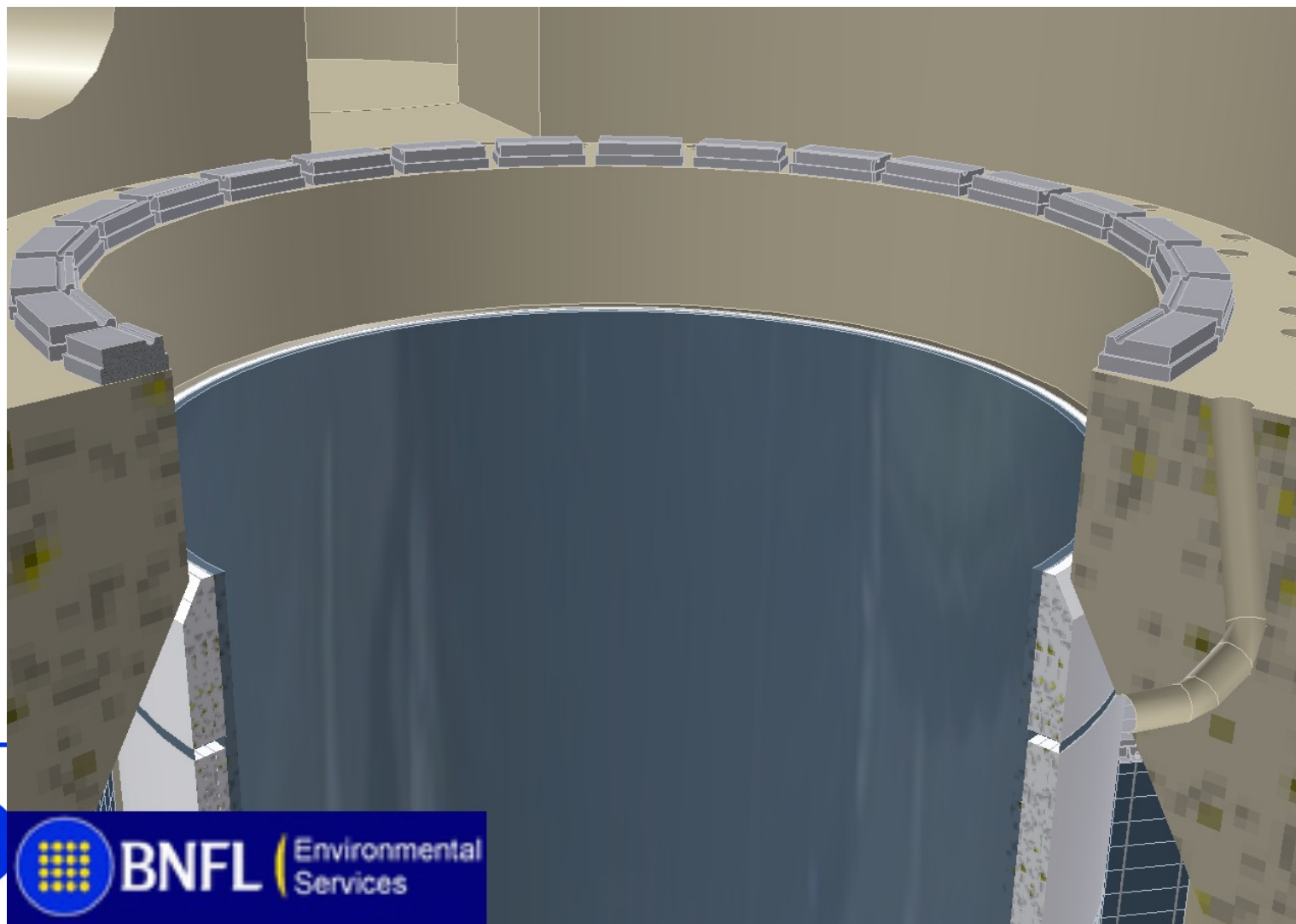


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# Stage 2 – End state

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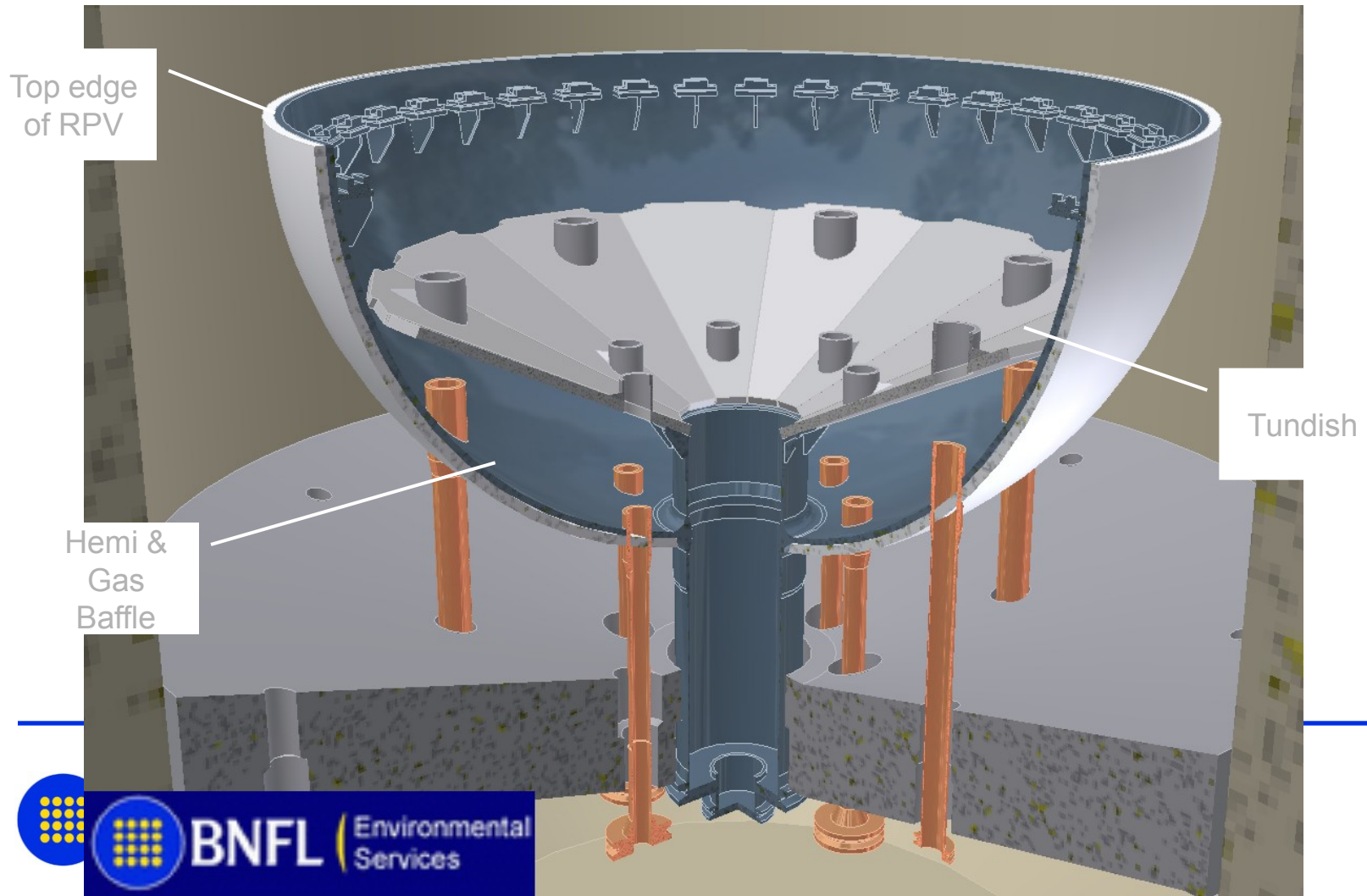


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# Stage 3 – End state

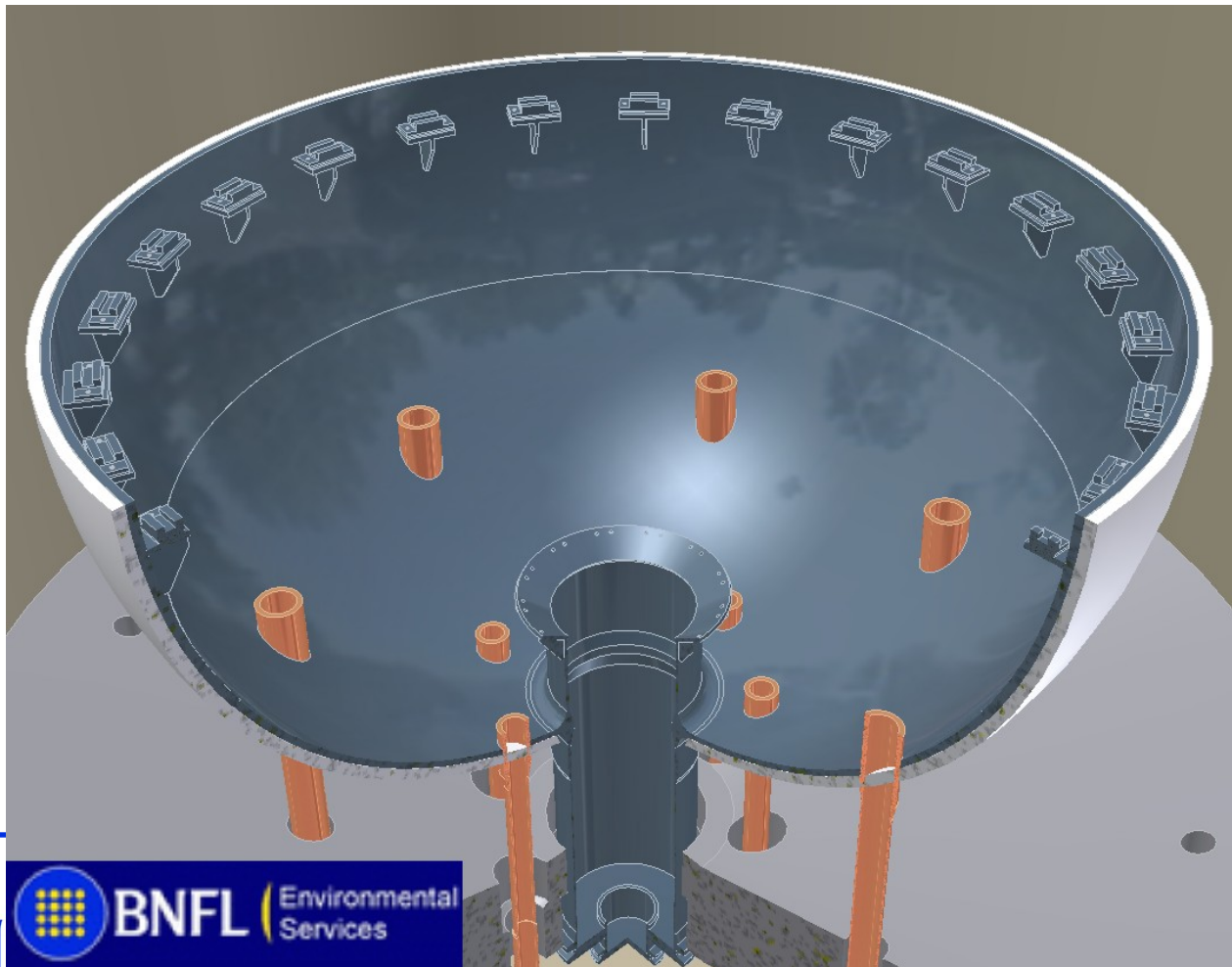
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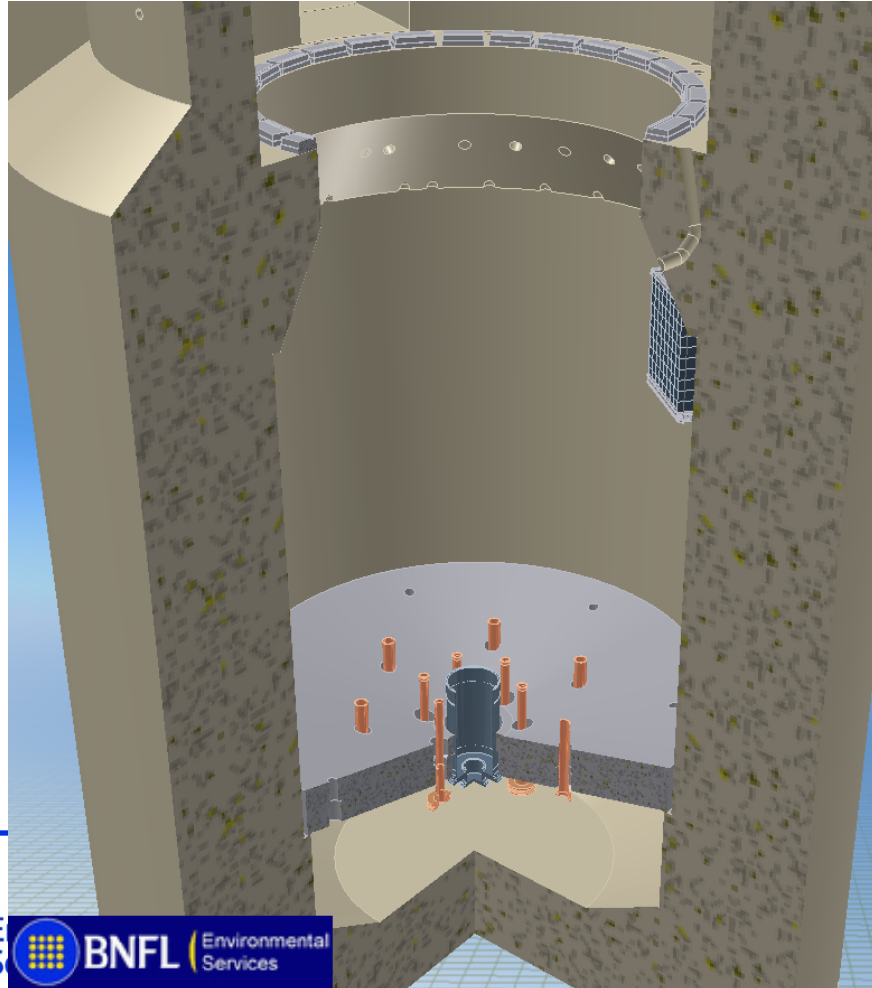
# Stage 5 – Tundish removed

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# Stage 5 – Lower hemi

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# WAGR Decommissioning

## Campaign 10

### Outer Vault Membrane and Thermal Columns Dismantling

# Methodology overview...

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- Options study currently being undertaken
- Assessment of dose will determine dismantling strategy - manual/remote
- Current assessment suggests reachability concerns with current equipment
- Alternative access to vault being considered

# Is WAGR a Success?

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- Safety - Without being safe the project cannot be a success. Seven years without lost time accident
- Dose Uptake - Minimised, in 2002 less than 1.05mSv to any single individual - 23.3mSv for whole project this is incorrect
- Technical - Fit-for-purpose solutions to arising problems
- Delivery - Project is currently 77% complete, ahead of programme and aiming to finish during 2004
- Commercial - Current forecast is that project will be completed under budget

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- To date - YES!

# Safety Performance

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- Control of what we do
- Taking ownership of a problem
- Do not accept unacceptable behaviour
- Be visible - Site safety tours
- Behavioural Safety
- Send people home safe and sound
- 7yrs without lost time accident

# Customer Relations

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- Successful completion of remaining methodologies
- Contract extension to cover additional work
- Implement customer satisfaction improvement plan
- Meet customers needs
- Involve the customer in all aspects of the project

# UK Project Resource Strategy

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- Deliver right people at right time to support project deliverables
- Develop our people and our capability
- Close liaison with Pile 1 resource co-ordinator
- WAGR agency personnel to staff recruitment phase 2
- Attitude survey results



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A highlighted box that offers a final summing up  
to the panel is often a useful tool